HERA
innovation in metals

Multi-storey buildings

Solving the housing crisis with sustainable light steel framing.

Productivity audits

Assessing our metals industry in welding & automation capability.

New research approach

Demystifying our research levy and how you can take advantage of it.

MetalBase

October 2018

Contents

Cover:

Our HS+E team doing their part for the 'environment side' of health, safety and environment! Planting natives at HERA House - harakeke, te kouka, manuka and pohutukawa, all courtesy of a kind donation from Metals NZ CEO Nick Collins.

Overleaf:

| 1 | Winners of HERA's sponsored Final Year Mechanical Engineering Student Project Prize at the University of Auckland - Mildred Wong and Nancy Zhou **| 2 & 3 |** Governance training at HERA House for our lead team, Executive Board & HERA Certification Panel **| 4 & 5 |** Shared lunch at HERA House in support of Mental Health Awareness Week **| 6 |** Another shot of our HS+E team planting trees **| 7 |** Shots from our CEO Troy Coyle's attendance at the University of Auckland Industry Advisory Board meeting this month.

From our CEO, Troy Coyle

October was our month to prepare.

FY19 is fast approaching and we want to make sure we're ready for it!

Firstly, following consultation with our members, we've initiated two key changes to how we administer research projects.

Earlier this year we re-engineered our Research Panel project assessment process to make it more rigorous. Now, we're making this process more transparent and engaging. And are actively seeking new project proposals from our members. You'd have received an email notification of this and we'll shortly be calling for project proposals.

We're also trialling a new approach to specifically identify research projects that will benefit our SME members in 'quick win' project category - so stay tuned!

Secondly, we've started developing roadmaps for each of our divisions. These will be completed by early next year and will feed into and out from our strategic planning circuit.

Thirdly, we're looking at new ways to develop the HERA strategy to make it more inspiring for both staff and members. This will ensure we're all excited about what we're doing for industry! We want to ensure this also aligns with our values and key messages so we're really focused on delivering meaningful outcomes.
You may have noticed that we've been engaging with you in this process and asking questions like "why are you a HERA member?" or "what are the challenges your business is currently facing".

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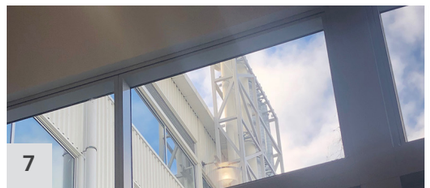
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Connect to your industry, clients and stakeholders via social media!

It's a step in the right direction to market your capabilities, share major milestones and news and promote your projects. And the best part is, it's completely free!

We've been working hard to do just that - so, follow us today!

Research and development

Solving innovation and engineering problems

Author

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Solving the housing crisis with a sustainable light steel framing multi-storey building option

The Greater Auckland region is facing a housing crisis that requires greater urban density to help fix it.

That's why our Structural Systems team has been conducting innovative research on a light steel framing (LSF) multi-storey building solution. An approach that answers the Auckland Unitary Plan's calls to action to house a growing population. While also giving structural engineers a flexible and alternative building material to what is currently on the market – and one that in the long run will require minor adaption for use across Aotearoa.

Project snapshot

Co-funded by BRANZ and NASH, we managed and conducted a comprehensive study of construction feasibility of light steel framed (LSF) multi-storey residential buildings in the Greater Auckland region.

This was a proactive industrial response to address the housing crisis through affordable multi-storey residential buildings, encouraged by The Auckland Council Capacity Growth Study 2013 (known as the Auckland Unitary Plan).

This project consisted of four work packages (WPs) to address critical technical issues and was based on an importance level of two, six storey LSF residential modular buildings with an 18m total height and floorplan of 16m x 19m. The work packages were:

WP1 – Fire performance of LSF floors in multi-storey residential buildings,

WP2 – Performance of stud-to-bottom plate joints in multi-storey residential buildings,

WP3 – Development of bracing solutions for light steel framed multi-storey residential buildings, and

WP4 – Cost for an exemplar six-storey light steel framed building.

At HERA we believe research like this is especially important, because it helps demonstrate how steel is a surprisingly cost-competitive choice. We see this proven in the LSF system, where it's pre-fabricated component units minimises on-site processes to reduce buildability costs. This offering will also provide a viable and versatile design alternative to timber or reinforced concrete builds.

For professionals and the broader NZ society, such product development will benefit them through the introduction of a highly recyclable LSF system. We know steel is a more environmentally sustainable building material option than most people realise – and this research is a great step towards dispelling any misconceptions!

Solving innovation and engineering problems

For WP1, HERA conducted advanced numerical modelling, in collaboration with a fire test in the BRANZ fire laboratory. This allowed us to establish a fire mechanism of lattice floor systems in G550 sections. Overall, filling a clear knowledge gap that existed for these popular NZ systems.

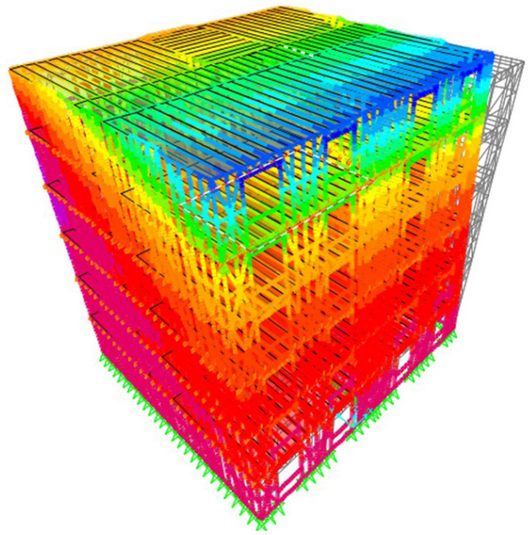
WP2 and WP3 were jointly studied with the University of Auckland. Resulting in an innovative seismic resistant system being developed. This was formed by shear wall systems detailed to a limited controlled rocking mechanism achieved by bolts holding down floor to floor connection details.

Led by Massey University, WP4 explored the fiscal viability of the proposed building system. We also engaged a chartered structural engineer (ExtraMile) to provide design service and consultation on our NZ industrial capacity for WP2-WP4.

The research outcomes have been well received by industry fabricators from NASH's membership, which is why they're now seeking a pathway for knowledge transfer to practical application. It's also anticipated further research on other performance criteria such as acoustic insulation and fire performance will now be carried out to support this industry commitment.

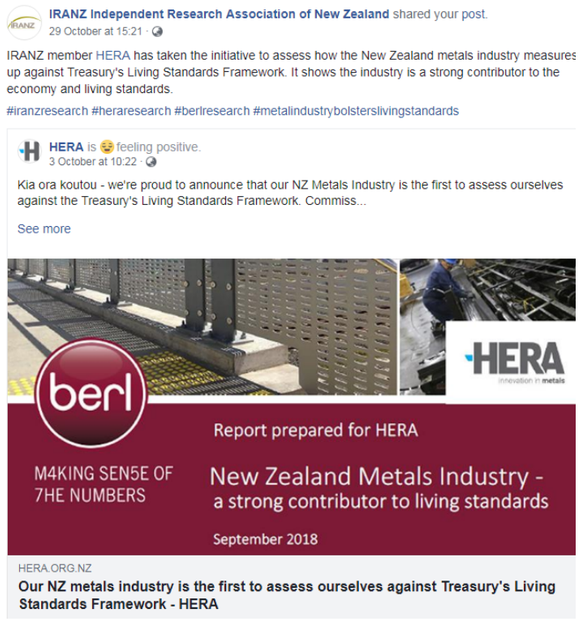
In the long run, combining the structural solutions proposed for this project, the research outcomes will be transferred to future revisions of NASH Standard Part 1 (which is cited in NZBC) and Part 2, which currently cover low rise buildings (total height up to 10m and Importance level of 1 and 2) only.

Overall, our research has shown this steel solution will improve construction sustainability. Ensuring our NZ construction industry will create a low CO2 society.



Want to know more?

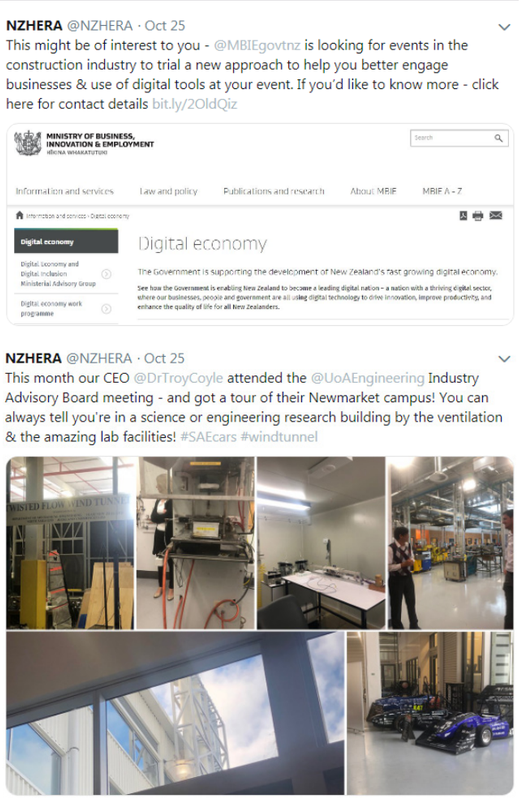
Get more project background and detailed technical information for HERA Report No: R4-151 or BRANZ Report ER34 [2018] by contacting our Senior Structural Engineer **Jing Cao**.



View our video:

Assessing the NZ metals industry against the living standards framework.

BERL Chief Economist Ganesh Nana explains the four capitals approach in relation to our NZ metals industry!



Our newly commissioned report shows the NZ metals industry is a strong contributor to the NZ economy and living standards of Kiwi's.

It was prepared by leading economic research and consultancy company Business and Economic Research Limited (BERL) using Treasury's Living Standards Framework (LSF).

We understand we're the first industry to review our performance against the LSF inter-generational wellbeing assessment.

A strong contributor to the economic performance of our nation

In terms of the conventional economic metrics, the metals industry is making a significant contribution to wellbeing in New Zealand.

The manufacturing component of the industry alone currently provides almost 30,000 full-time equivalent (FTE) jobs and generates around $3.3 billion in gross domestic product (GDP) each year.

The non-manufacturing component (which includes diverse activities such as research, consultancy and services that support manufacturing), can't be measured in the same way. However, it adds significantly to the economic contribution.

What is the LSF and how does it differ to conventional economic frameworks?

The LSF is still being developed and isn't yet a fully operational tool. It's been based on OECD research and Treasury has been developing it since 2011. In brief, it rests on the notion that inter-generational wellbeing depends on the growth, distribution and sustainability of four interdependent capitals:

- Human,
- Social,
- Physical and financial, and
- Natural.

Wellbeing associated with using the four capitals can be measured in terms of a diverse set of current wellbeing indicators. This includes such things as the proportion of dwellings with basic amenities, air and water quality, personal income, life expectancy, and a range of others.

All indications suggest that the LSF will be used to assist Government in determining investment priorities and may form a key part of the 2019 Wellbeing Budget.

So – how is our metals industry helping to develop and sustain New Zealand's wellbeing?

The report shows that our industry helps to develop and sustain New Zealand's financial and physical capital. This is primarily through the supply of vital goods and services used in investments in transport infrastructure, construction and building. Beyond their volume or value, our industry adds to the quality of the investments by increasing the resilience of the built environment and by enhancing the performance of structures and buildings.

We help to safeguard natural capital by working to reduce raw material inputs and harmful emissions, promoting and adhering to environmental standards, and conserving air and water quality. Perhaps most conspicuously, the industry safeguards natural capital because the principal metals it produces and uses can be recycled over and over again, without degradation.

We also make a diverse contribution to human capital. Beyond providing tens of thousands of livelihoods, we contribute to the development of skills and knowledge in the workforce though the provision of traineeships and apprenticeships. As well as ongoing training and development for employees in subsequent stages of their careers.

Research and development and standards development activity takes place in all parts of the industry (i.e. in metals manufacturing and in the various supporting activities).

It's also evident that we have effective mechanisms for sharing the outcomes of R&D and promoting adherence to existing and new Standards. These mechanisms, combined with collaboration between players in different parts of our industry, enhance the value of their outcomes.

Social capital has a range of different aspects, but doesn't have a precise definition. However, our contribution in terms of several of the aspects can be illustrated. In particular, we're making significant philanthropic contributions. We are also supporting our local communities in other ways, such as sports sponsorship. In addition, we promote trust within the industry, our customers and the general public, through the development and implementation of standards.

What does this all mean?

At HERA, we believe the LSF is an exciting new way of looking at economic contribution. It's more encompassing of the full contribution of an industry. Going beyond simple measures like GDP and employment gives a more holistic view of the importance of our industry. However, it does present some challenges when trying to communicate these benefits.

We realise that the LSF is in the early stages of development but we also see that it offers a lot of potential and is likely to disrupt economic assessment. Seeing this disruption coming, we're getting on board with it early. The report demonstrates we're a valuable thread in the materiality of New Zealand life. It also shows opportunities where we can start to add more value and better communicate what we already do add!

What now?

We recommend all our members become familiar with the LSF as it is looking to become an instrumental part of Government policy and administration. More detail about the LST can be found in this speech from the Secretary to the Treasury, Intergenerational Wellbeing: Weaving the Living Standards Framework into public policy, delivered 13 December 2017. Further information is available in a set of discussion papers released February 2018.

We also encourage you start using the LSF terminology when communicating with your customers, stakeholders, MPs and the general public. We need to make sure that New Zealanders understand the importance of our industry and how we make a difference to their lives – both current and future.

Finally, we challenge you to start thinking about ways to start measuring and demonstrating our contribution to New Zealand. We have excellent data and statistics but we need to start selling our "heart" story. New Zealanders need to understand how we are contributing to their wellbeing in a way that is meaningful to them… and statistics certainly don't give the full picture!

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Welding advances

Helping our members develop the right capabilities for their needs

Author

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HERA offering welding productivity and automation assessments

Recently, our Welding Centre staff assessed welding productivity and automation capability for seven of our members.

This was a feasibility study to test our Minimum Viable Product (MVP) and determine if such assessments could:

1. Add value to individual members; and
2. Identify common issues that we could assist members generically to address.

Using our networks to solve members' problems

These assessments were conducted in collaboration with the University of Wollongong's Facility for Intelligent Fabrication (FIF).

The manufacturing component of the industry alone currently provides almost 30,000 full-time equivalent (FTE) jobs and generates around $3.3 billion in gross domestic product (GDP) each year.

Prof Chris Cook (former Executive Dean of Engineering and Informatics at the University of Wollongong) and Prof John Norrish (Professor Emeritus of Materials Welding and Joining) came from FIF to assist us with these assessments.

What did we evaluate?

The assessments evaluated performance against ten criteria:

1. ISO 3834:2 – do we fully implement a quality management system to this standard?
2. Welding 4.0 – do we fully implement Welding 4.0 concepts (interconnectivity, in-process control, data collection, visualisation, equipment capability, data analysis, staff capability)?
3. Workshop layout – do we have the optimal workshop layout for the range of products considered?
4. Processing equipment – do we have the optimal processing equipment?
5. Positioning equipment – do we have the optimal positioning equipment?
6. Welding equipment – do we have optimal welding equipment?
7. Workshop – do we implement all process in a correct way in the workshop?
8. Automation – do we have the optimal level of automation for our fabrication?
9. Data analysis – do we collect and analyse quality and productivity data in a systematic way?
10. Innovation – do we implement a strategy of innovation aiming at continuous improvement of processes and equipment?

Participants were rated against each of these criteria and compared to the mean values across all participants. Opportunities for improvement were identified and recommendations made.

Where to from here?

We'll now follow-up individually with each participant. We'll also review the common actions and develop a plan to assist the industry more broadly.

Three improvement areas were identified as being common:

1. Data collection
2. Data analysis
3. Independent comparative cost/payback analyses for potential automation and welding systems

Now that we've identified a need for these assessments, we'll start to offer welding productivity assessments as a new service available to our members. We'll also work further on the automation assessments.

We already have a research project running on data collection and analysis (a Welding 4.0 project), which fits naturally with the first two points. We're in discussions to expand this capability in automation and robotics and will collaborate further with the FIF to do so.

We also want to explore the option of developing Innovative Fabrication Groups, with the first being an Automation (IFG-A) group. Through such groups, we'll coordinate services for like-minded members. For example, we're in the process of facilitating a study visit to the University of Wollongong's Facility for Intelligent Fabrication. This would then become an activity that IFG-A groups can participate in, as well as exclusive training and sharing of insights.

Interested to be a part of this movement?

Please contact our General Manager Welding Centre Michail Karpenko to register your interest in a welding productivity assessment or to join our Innovative Fabrication Group for Automation.

We're potentially visiting the Facility for Intelligent Fabrication in November so time is of the essence if you'd like to be part of this trip!

NZHERA @NZHERA · Oct 1

Last month, our Welding Centre assessed #welding #productivity & #automation capability for 7 of our members. This was our #MVP study to determine if these assessments could add value to individual members & identify common issues we could help address. bit.ly/ai-audits

innovationinmetals

innovationinmetals External overhead lifti
#crane in the #GraysonEngineering stock y
- a great photo captured while our #Welch
Centre team headed to their #Manukau
workshops to carry out #productivity and
#automation audits in collaboration with
@uow
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#beauty #solid #structuralsteel #strength
#hiddenbeauty
#steel #construction #nzmade
#buildingcommunities

13 likes

OCTOBER 1

innovationinmetals

innovationinmetals Transporting bridge sections to site on the back of a truck!
#ProjectFlor
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#steel #construction #NZproject
#membersuccess #proudaspunch #nzmade
#kiwiingenuity #hiddenbeauty
#buildingcommunities
#transportinfrastructure #
#beauty #solid #structuralsteel #strength
#mobilebridge

15 likes

OCTOBER 2

Add a comment...

innovationinmetals

innovationinmetals Internal crane and lifting equipment to move stock and fabricated items safely and efficiently.
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#FarraEngineering #steel #construction
#nzmade #hiddenbeauty
#buildingcommunities #solid #structuralsteel
#strength #hiddenbeauty

engineering_concepts, **eralmetal**, **tonkintaylor**, **stopdiggingnz**, **troy.coyle**, **surander.pal** and **sweetdaddylee93** like this

OCTOBER 3

Add a comment...

innovationinmetals

innovationinmetals The #WaikatoStadium new TV screen being lifted into place!
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Circa #2016 #steel #construction #design
#NZproject #membersuccess #proudaspunch
#nzmade #hiddenbeauty #beauty #solid
#structuralsteel #strength
#nothingsimpossible

11 likes

OCTOBER 4

Add a comment...

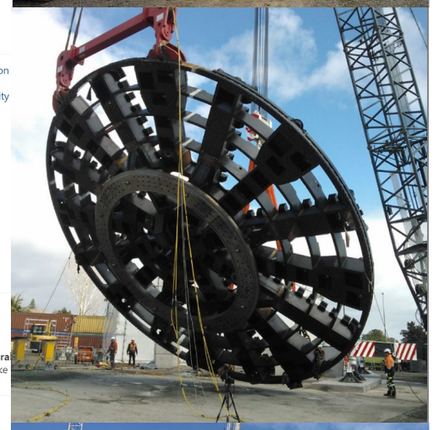
innovationinmetals

innovationinmetals #steel #construction
#design #NZproject #membersuccess
#proudaspunch #nzmade #kiwiingenuity
#hiddenbeauty #buildingcommunities
#cranes

glavgeo, **peteceats**, **troy.coyle**, **sweetdaddylee93**, **moolikecow**, **whandering_ghost**, **edinburgh_structura**l, **masterlyinc** and **nicholaskinghomes** like

OCTOBER 5

Add a comment...



innovationinmetals

innovationinmetals #PageMacraeEngineering lifting Alice's tunnel boring machines cutting head into place after assembly
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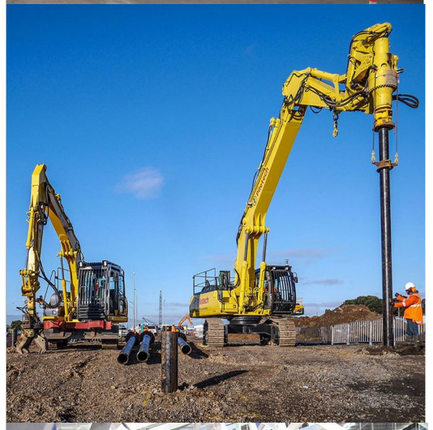
#WaterviewConnection #steel #construction
#NZproject #membersuccess #proudaspunch
#nzmade #kiwiingenuity #hiddenbeauty
#buildingcommunities #transport
infrastructure #beauty #solid #structuralsteel
#strength #largescale #cranes

11 likes

OCTOBER 8

Add a comment...



innovationinmetals

innovationinmetals #drillingpilesandmakings miles Our member @piletech on site at #kirkbrideroad intersection in #Auckland doing their thing! .
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#steel #construction #design #NZproject
#membersuccess #proudaspunch #nzmade
#buildingcommunities
#transportinfrastructure

13 likes

OCTOBER 9

Add a comment...

innovationinmetals

innovationinmetals This year we had our #weldingteam head down to #Hamilton to be part of the official opening of the 'Ernest E' #ullrichaluminium new national sales centre. It was a fantastic occasion full of #culture #celebration & learnings with a #fieldday showcasing the latest in the #metalsindustry as well! .
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#steel #construction #design #NZproject
#membersuccess #proudaspunch #nzmade
#buildingcommunities #newkidontheblock

11 likes

OCTOBER 10

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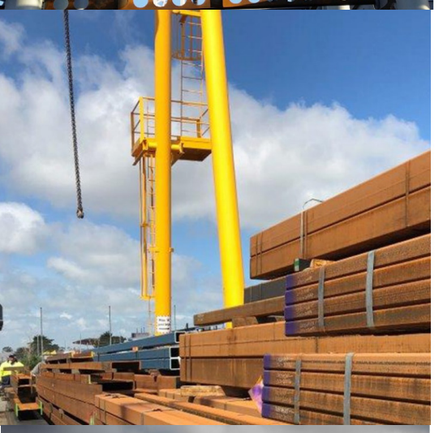


innovationinmetals

innovationinmetals #steelstock
#graysonengineering #hues #design #bea
#solid #structuralsteel #strength
#hiddenbeauty #futurebuildings
#destinedforgreatness

tonkintaylor, **libras.bazaar**, **troy.coyle**, **peteeats**, **stopdiggingnz**, **arrowsofvictory**, **amsgroupnz** and **_n111tz_** like this

OCTOBER 11

Add a comment...

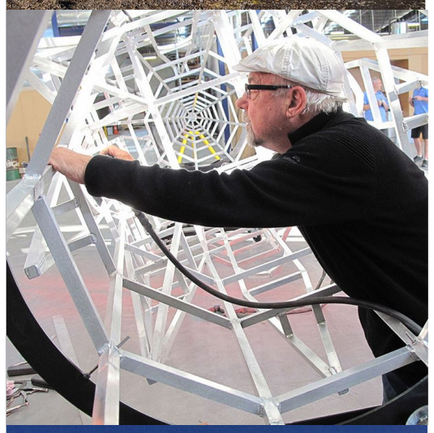
innovationinmetals

innovationinmetals As we see the #nzicc go up - we're amazed at how the #construction seems to dance with the skyline! #bdsvircon .
.
#steel #construction #design #NZproject
#membersuccess #proudaspunch #nzmade
#hiddenbeauty #buildingcommunities
#design #beauty #solid #structuralsteel
#strength #cranesforafrica #skycitytower
#newkidintown

syed.abdul.hannan, **tonkintaylor**, **stopdiggingnz**, **weedsharks**, **united_contractors** and **engineering_concepts** like this

OCTOBER 12

Add a comment...



innovationinmetals

innovationinmetals Works on #Spires - a 180kg #aluminium sculpture designed by Neil Dawson and installed at #latimersquare in #christchurchnz by our members #lewisbradford .
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#steel #construction #design #NZproject
#membersuccess #proudaspunch #nzmade
#hiddenbeauty #sculptureart #beauty #solid
#structuralsteel #strength

15 likes

OCTOBER 15

Add a comment...

innovationinmetals

innovationinmetals An #innovation award winning design in #kaiapoinz by our members #donovangroup & #newzealandsteel .
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#steel #construction #design #NZproject
#ingenuity #membersuccess #proudaspunch
#nzmade #kiwiingenuity #hiddenbeauty
#buildingcommunities

lilianraven Love this

innovationinmetals @lilianraven

11 likes

OCTOBER 16

Add a comment...

innovationinmetals

innovationinmetals The amazing #canadastreetbridge in #Auckland done by our members @novaredesignnz and @hawkins_nz
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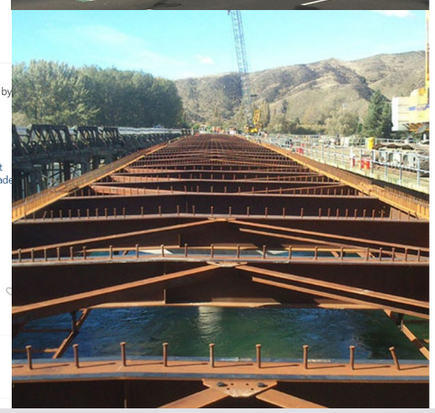
#steel #construction #design #NZproject
#membersuccess #proudaspunch #nzmade
#kiwiingenuity #hiddenbeauty
#buildingcommunities
#transportinfrastructure #beauty #solid
#structuralsteel #strength #bridge

staycoolhomestay Hey, cool post! Quick question, we are a Homestay Agency looking for new Homestay Families in Auckland and Brisbane. Do you know anyone who has a spare room who could host an international student? The families are paid weekly.

13 likes

OCTOBER 17



innovationinmetals

innovationinmetals A fantastic shot from our member #Eastbridge - of one of the steel bridges they were constructing here in #aotearoa .
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#steel #construction #design #NZproject
#membersuccess #proudaspunch #nzmade
#transportinfrastructure #kiwiingenuity
#hiddenbeauty #buildingcommunities
#hues #beauty #solid #structuralsteel
#strength #bridge

engineering_concepts A thing of beauty! Waiau?

follicl_ New Kurow bridge?

innovationinmetals @follicl_ @engineering_concepts - honestly we aren't sure what bridge it is as our member didn't give a project description when they sent the image

13 likes

OCTOBER 18

innovationinmetals

innovationinmetals #HendersonParkFootbrid ge #transportinfrastructure
#steel #construction #design #NZproject
#membersuccess #proudaspunch #nzmade
#kiwiingenuity #buildingcommunities
#beauty #solid #structuralsteel #strength
#hiddenbeauty #bridge

kira_nail_art Nice!!

10 likes

OCTOBER 19

innovationinmetals

innovationinmetals A futuristic pedestrian pathway sculpture by our members @novaredesignnz - Point Resolution Footbridge
Photo credit #patrickreynolds
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#steel #construction #design #NZproject
#membersuccess #proudaspunch #nzmade
#kiwiingenuity #hiddenbeauty
#buildingcommunities
#design #beauty #solid #structuralsteel
#strength #transportinfrastructure #bridge
#2015annualreport

11 likes

OCTOBER 24

Add a comment...

Showcasing your projects to the world on #instagram

innovationinmetals

innovationinmetals #mirroredwonder - a work of art in New Plymouth: the Len Lye building is a unique design courtesy of architectural firm @pattersonassociates which consists of 32-tonne of #stainlessteel metal encasing the $11.5m building. We're proud our member #steelandtube were a part of it!
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@govettbrewster #steel #construction #design #NZproject #membersuccess #proudaspunch #nzmade #kiwiingenuity #buildingcommunities #artsculpture #lenlyecentre #architecture #2015annualreport #hues #beauty #solid #structuralsteel #strength #reflections

tonkintaylor 😎😎😎

innovationinmetals @tonkintaylor -

13 likes

OCTOBER 25

Add a comment...

innovationinmetals

innovationinmetals Rural construction at its best! Beautiful surroundings, stunning weather, and building connections! #HEB #beamlift and installation
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#steel #construction #design #NZproject #membersuccess #proudaspunch #nzmade #kiwiingenuity #hiddenbeauty #buildingcommunities #transportinfrastructure #bridge #beauty #solid #structuralsteel #strength #cranes #howsthescale

10 likes

7 DAYS AGO

Add a comment...

innovationinmetals

innovationinmetals Our members #JensenSteel putting up the main structure of the @avantidrome - requiring over 520 tonne of steel. The #trusses run the width of the enclosed arena and were #fabricated and trial assembled at their yard, before being broken apart and taken over to #Cambridge in the middle of the night on their Truck and Jinka unit!
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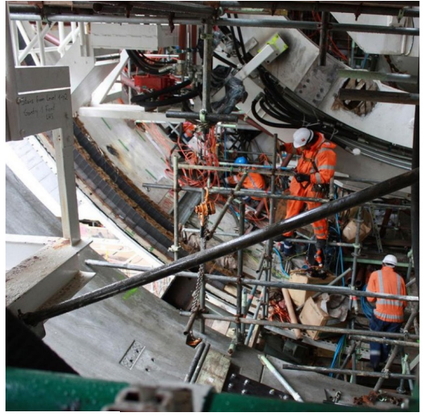
#steel #construction #design #NZproject #membersuccess #proudaspunch #nzmade #kiwiingenuity #hiddenbeauty #buildingcommunities #hues #beauty #solid #structuralsteel #strength #sportsrecreation #2015

6 likes

3 DAYS AGO

Add a comment...



innovationinmetals

innovationinmetals Works on the #WaterviewTunnel - erecting Alice the tunnel boring machine which was responsible for excavating New Zealand's longest tunnel! Its sections weighed several hundred tonnes and Alice's tunnel works were completed in October 2015. .
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#steel #construction #design #NZproject #membersuccess #proudaspunch #nzmade #kiwiingenuity #hiddenbeauty #buildingcommunities #hues #beauty #solid #structuralsteel #strength #technology #transportinfrastructure #sh16causeway

12 likes

2 DAYS AGO

Add a comment...

HERA is 😍 feeling inspired.
Published by Kim Nugent [?] · 2 October ·

Congratulations to our member Grayson Engineering who were named a finalist in the #SCNZ $500-$3M project category for Jacob's Ladder - a steel sculpture for Gibbs Farm.
Commissioned by sculptor Gerry Judah it used approximately 72 tonnes of square hollow steel sections (SHS) and stood at 33.5m high! It's an impressive project that relied on accurate #fabrication effective planning, #collaboration and clear communication between the international design team.

HERA
Published by Kim Nugent [?] · 4 October at 10:00 ·

Seriously - how beautiful is #steel in this shot! An amazing image from our members #QuoinStructuralConsultants of the #Norwest on Victoria in #Christchurch - a $9m four storey commercial building constructed on a complex triangular shaped corner site! Featuring of course, beautiful steel moment resisting frames and metal louvres.
#steel #construction #design #NZproject #membersuccess #proudaspunch #nzmade #steelart

HERA
Published by Kim Nugent [?] · 5 October at 10:00 ·

From lofty heights! Our members #FarraEngineering doing their thing 👊
#steel #construction #design #NZproject #membersuccess #proudaspunch #nzmade #kiwiingenuity #hiddenbeauty #flyinghigh #AR2017

HERA
Published by Kim Nugent [?] · 18 October at 10:00 ·

This is a throw back to our past member #InitiativeEngineering while they were working on the Cashen Quay 2 rebuild at @lytteltonport to #weld pile casings quay side. Executing approximately 2,100 welded joints in total as the main contractor for this particular project deliverable!

Sadly, they're no longer operating despite the great work they did. A stark reminder to the rest of our members to keep #innovating in your business to remain competitive.
#steel #construction #design #NZproject #nzmade #kiwiingenuity #hiddenbeauty #innovation

HERA
Published by Kim Nugent [?] · 19 October at 10:00 ·

20 Customshouse Quay #Wellington in construction in 2017. A new 14 level office building with #NZGBC 5 ⭐ Green Star rating boasting features such as #baseisolation #diagrid and improved #seismic performance & resilience!

We're so proud of our members #Dunning Thornton who delivered the #structuralengineering & #MJHengineering who #fabricated the 2,000 tonnes of #steelwork (who also recently won at SCNZ Structural Awards in Rotorua last month).

#steel #construction #design #NZproject #membersuccess #proudaspunch #nzmade #kiwiingenuity #hiddenbeauty

HERA
Published by Kim Nugent [?] · 30 October at 10:00 ·

Night shift for our members PFS Engineering who were installing the beam to Pier 1 of the #CanadaBridge - the only orthotropic bridge in the world! At 160m long, it boasts 300 tonne of steel formed into horizontal and veritical curves as well as #haunching #precambers changing gradient & changing supports and spans!
#steel #construction #design #NZproject #membersuccess #proudaspunch #nzmade #kiwiingenuity #hiddenbeauty #innovation

HERA
Published by Kim Nugent [?] · 25 October at 10:00 ·

Member Page Macrae Engineering in action on one of their projects! #steel #construction #design #NZproject #membersuccess #proudaspunch #nzmade #kiwiingenuity #hiddenbeauty

NZHERA @NZHERA · Oct 4
Congratulations to our Executive Board Member Craig Stevenson who has been named as one of the new @Aurecon appointees to work on delivering #sustainable #efficient #resilient #infrastructure in #NewZealand as the Service Line Leader. #TechnicalLeadership bit.ly/2y4GkC0

#SocialStream
October

NZHERA @NZHERA · Oct 10
Our GM Industry Development @BoazHabib recently attended a @callaghannz #blockchaintechnology seminar. Here, US speaker Langdon Morris shared the basics with attendees using the dairy supply chain as an example. Was great to see our member #Longveld there too! 😀 #futuresthinking

Demystifying HERA's research levy

To better support and drive innovation within our industry

In our 2018 membership survey, you let us know that you're mostly very happy with our support.

However, we consistently hear from SME's that they believe we're only here for the bigger players. And, that the way the levy is administered is unclear.

So let's start by saying that HERA is absolutely here to support the whole industry!

We want to make sure all our members are feeling engaged. And, that the process for determining our research direction is both engaging and transparent. Infact, we have an obligation to ensure that funds collected by the Heavy Engineering Research Levy (HERL) are used for the purpose they are being collected for!

Demystifying the Heavy Engineering Research Levy (HERL)

What is it?

HERL is governed by the Heavy Engineering Research Levy Act, 1978. It's a common good research levy imposed on all heavy engineering goods comprising items defined by certain tariff codes within the Act. These are defined in Schedules 2 and 3 of the Act and put simply, cover heavy steel and welding consumables.

Who pays the levy?

The person liable to pay the levy on any levied item is the person who is the importer of the item or who produces it within NZ. To be clear, the levy applies to both importers and local manufacturers equally.

How is the levy collected?

New Zealand Customs collects the levy on imported items. Local producers pay the levy directly to HERA.

What can the levy funds be used for?

Broadly speaking, it is used for the promoting and conducting of research and other scientific work into or relating to the heavy engineering industry. This can include (so long as it relates to heavy engineering research and its promotion):

- Establishing research facilities and equipment;
- Carrying out tests and experiments- eg. on materials or techniques;
- Maintaining the HERA library;
- Encouraging the study of heavy engineering research;
- Allocating grants;
- Holding lectures, seminars, exhibitions, and public meetings;
- Publications;
- Providing general advisory services;
- The acquisition of land and premises, and their maintenance;
- The erection of premises;
- Acquiring intellectual property;
- Refunding incorrect levy payments; and
- General administration of HERA activities.

How is heavy engineering defined?

As the branch of engineering that:

- Characteristically but not exclusively uses as its raw material ferrous or non-ferrous metals in the form of plate having a thickness greater than 4.5 mm or in the form of angles, shapes, and sections exceeding 80mm by 80mm in cross-section; or
- Is engaged in the machining of components or items large enough to require cranage to present or locate the workpiece to or in a machine tool being used in the fabrication of machines, equipment or structures.

Schedule 1 of the Act then defines what items are typically produced by the heavy engineering industry.

Administering our research program – focusing on quality and impact

Who can propose a research project?

Any HERA member can propose a project, using our Project Proposal Template.

We also have Panel Assessment Guidelines available to show the project proponent criteria the panels use to assess these proposals.

How do we prioritise our research funding?

We have an obligation to focus our efforts on research that will impact the industry (common good) and for it to be of high quality.

To prioritise our funding, we use defined criteria to rank project proposals. At a high level, research quality contributes 30% of the rating, research impact contributes 40% and alignment with HERA strategy contributes 30%.

Who approves projects?

Ultimately, the HERA Executive approves the projects.

Who ranks the projects?

HERA research panels rank the projects, of which we have three:

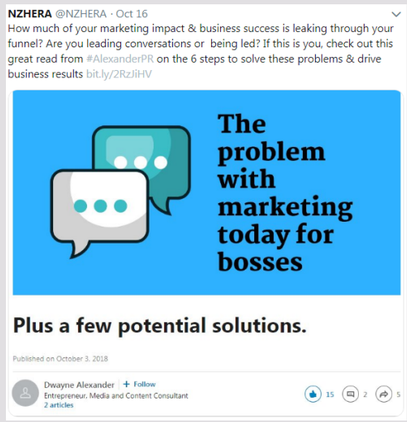
1. The Steel Research Panel;
2. The New Zealand Welding Centre Panel; and
3. The Industry Development Panel.

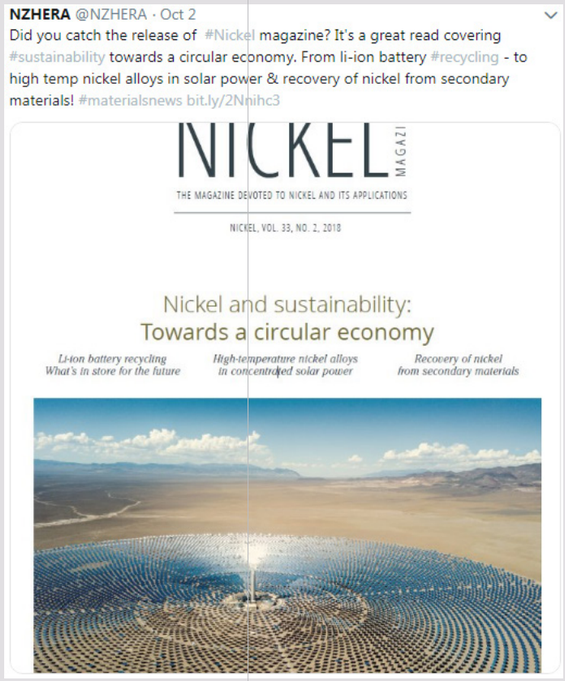
These Panels are all comprised of HERA members.

Continued page 16...

#Notices #Updates

#Thoughtleader
#communication
#marketing





#GenderEquality
#WomenInEngineering

Our leadership team then review these rankings against the available budget, and make a recommendation to our HERA Executive.

When are project proposals considered?

As we run to a strict annual budgeting process, the panels assess project proposals once per year. This is typically in February/March, for projects to proceed in the subsequent financial year.

Improved engagement and transparency

We introduced the Project Proposal Template and Panel Assessment Guidelines outline above, this year.

These create greater transparency around how projects are assessed and provide a tool for members to propose projects. This process isn't onerous and is intended to make it easy for our members to engage.

There is however, a flaw. Because HERA is called to support industry both now, and into the future. The problem being the current panel process leads to a focus on only the 'now'.

This makes sense, as our members are really having to deal with the immediacy of these here-and-now issues.

Trialing a new approach

As the catalyst for innovation in our industry we knew we had to come up with a way to cover the three types of innovation:

Incremental (mainly development);

Adjacent (mix of applied research and development); and

Transformational (mainly applied research).

We're doing this by trialing a new three step approach for project assessments (for projects to be conducted in FY20):

01 Engage more with our smaller members by democratising smaller project processes

We'd like to trial a process to better engage and support our smaller members. By asking you to identify and tell us about projects you need us to work on that will deliver you quick wins.

These project ideas can only be submitted by our smaller members (<50 employees).

We'll then scope up the ones we think we can deliver quickly on and within our available budget. We'll then ask all of our smaller members to vote on which out of these they'd like to prioritise (if we get a lot of proposals!).

We'll call for these proposals shortly. And we hope that you'll put your thinking hats on and let us know where you really want us to help with!

02 Continue to focus on transparency and engagement for core research activities

We still intend to allocate the bulk of our funding to panel-approved projects that maximise research quality and common good industry impact.

And, we'll be actively seeking project proposals from our members directly.

Our staff will also work up project proposals based on their interactions with members.

03 Protecting the future

In order to protect our future-focus and ensure we're also preparing our industry for what is coming, we'll allocate a set budget (approved by the Executive) to transformational R&D.

Examples of this could include use of blockchain for managing steel supply chains and Industry 4.0 data collection and analysis for improved welding quality and productivity.

This will make sure that we have the right mix of solving the here-and-now problems and preparing our industry for the future.

Got a problem that needs solving with research? We're here to help.

We'll be calling for member project ideas shortly. This will be for larger panel projects (via project proposal forms) and quick-win projects for our SMEs.

Please keep an eye out for these calls and put forward your ideas!

We're certainly keen to engage and hope that you will actively participate in the opportunity. Please also feel free to give your feedback on the new approach.

Innovation READY - Day 4 recap

Building real estate in innovation leadership

Property infrastructure is on our radar for the month of October. And, not surprisingly it got us to thinking about what infrastructure needs to be developed to create a better organisational leadership culture.

To answer this, we took inspiration from the Founder of Doblin Larry Keely who said "Innovation is the elegant integration of many things'. A sentiment also advocated by Callaghan Innovation Program Manager Ross Pearce – our thought-provoking Innovation READY guest speaker for Day 4.

He was so eye opening that one of our attendees said, 'It was the best session we've had so far!'.

It's certainly feedback we're happy to receive. This program is very much our own Minimum Viable Product (MVP) to drive innovative thinking in our industry. Knowing that we're got better over time tells us we're delivering value to participants and validates we're on the right path!

What did Day 4 teach us?

A number of revolutions are taking place as we speak.

They're acting as immutable forces of change, providing the perfect storm for disruption. Whether technology, climate, energy, urban or social revolution – our industry must make themselves aware of them.

For example, we learnt that over the next two decades, 40% of NZ jobs will be at risk to automation. This statistic is no different for our Australian neighbours – so don't think jumping across the ditch will save you!

How do we prepare for disruptions 'perfect storm'?

According to Doblin, there are ten unique ways to innovate, which they call the 'ten types of innovation.'

1. **Profit model** – how you make money. Eg. Netflix turning the video rental industry on its head with a subscription model.
2. **Network** – how you connect with others to create value. Eg. Target working with renowned external designers to differentiate itself.
3. **Structure** – how you organise and align your talents and assets. Eg. Whole Foods building a robust feedback system for their internal teams.
4. **Process** – how you use signature or superior methods to do your work. Eg. Zara's 'fast fashion' strategy to move its clothing from sketch to shelf quicker.
5. **Product performance** – how you develop distinguishing features and functionality. Eg. OXO Good Grips premium cost still has a loyal following due to its 'universal design'.
6. **Product system** – how you create complementary products and services. Eg. Nike+ parlayed shoes, sensors, apps and devices into a sport lifestyle suite.
7. **Services** – how you support and amplify the value of your offering. Eg. 'Deliver WOW through service' is Zappo's #1 internal core value.
8. **Channel** – how you deliver your offerings to customers and users. Eg. Nespresso locks in customers with its useful members only club.
9. **Brand** – how you represent your offerings and business. Eg. Virgin extends its brand into sectors ranging from soft drinks to space travel.
10. **Customer engagement** – how you foster compelling interactions. Eg. Wii's experience draws more from the interactions in the room than on-screen.

Interestingly, most effort is put in to product performance. However, the most value actually comes from innovating outside this space!

How can we overcome the impact of these revolutions?

The answer lies in thinking differently to how we are thinking now. This means we have to move from business management, to embracing innovation leadership.

By no means is this easy though!

We need support to make this happen. We need to be constantly hearing innovation and disruption messages so we can understand their implications and how it'll impact our businesses.

To achieve this, our Innovation READY participants have found the camaraderie experienced on the course is invaluable. They're surrounded by like-minded people, and are offered a level of support and encouragement by us on their journey that they don't necessarily get in their own workplace – YET!

Transition to an innovation leader today!

Our Innovation READY program is successfully coming to its end now, with only one more day to go in October. After that we'll be ready to take in the next group of participants who want to make the most of innovation opportunities and prepare for it.

It has to be said that innovation is a business discipline and needs to be treated as such. Our newly minted innovation managers coming out of the course will be taking this message to their firms and making it happen.

The benefits from learning about innovation are exponential – and limited only by your own thinking.

Changes in thinking needed to move from managing to leading

Business management	Innovation leadership
Have a leader	Everybody is a leader
Invest in tools	Invest in people
Follow best practices	Develop next practices
Play the game	Change the game
Compete	Collaborate
Start with what and how	Start with who and why
Usual behaviour	Curious behaviour
Complex decisions controlled at top	Complex decisions distributed
Message	Engage
Goal driven	Discovery driven
Solution driven	Value driven

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Could your company infrastructure be set to face a natural disaster?

In today's digital age, traditional manufacturing companies must harness disruption before it engulfs them.

If you aren't prepared – your company infrastructure is a natural disaster waiting to happen through digital disruption.

That's because natural disasters aren't just restricted to events of nature. Nature of events can run their course in businesses and markets as well. You see, just like a natural force of a tsunami can destroy townships, similar waves of disruption can upend large businesses. Think startups who have nothing to do with the businesses they ultimately end up disrupting!

So what is this new wave of potential disruption?

It's data and its digitisation.

Google didn't need a press to overtake the newspaper and magazine publishing industry. Netflix didn't change one physical aspect of the DVD. And, despite it's arguably better physical engineering – Nokia got knocked out by smartphones.

Data has found ways to determine who reigns supreme – even among the most sophisticated physical objects. It's the new oil or primary raw material for the industrial revolution of digitisation. It needs to be mined, refined and distributed. And, those who win aren't the ones who create new data – but those who figure out what to do with it.

Digital technology has enabled small startups to upset industry after industry. Spotify took just 12 years to reach 2017 revenues of $5.5 billion to replace CDs with streamed music. In less than 10 years, Airbnb grew to $2.6 billion, to unsettle the hospitality industry. And Uber, also less than 10 years old, brought in $7.4 billion as it replaced taxis. These David and Goliath stories show how it's becoming possible for small startups to set sights on industries whose barriers to entry once ran into the billions.

What does it all mean for us here in NZ?

Firms are realising the impact digital transformation will have on their businesses. Particularly in terms of the associated need to constantly change required skill sets.

A survey of 20,000 employers across 42 countries (including over 650 in New Zealand) found employers are anticipating continued growth in automation to drive an increase in headcount over the next two years. This will require more people and more skills.

On the impact of automation, 20% of New Zealand employers expect to grow their workforce. While 64% plan to maintain their current headcount over the next two years. This implies that digitisation will be a net gain for employment across New Zealand with a new blend of employee skills for the digital age.

However, companies are finding it hard to get the talent they need. This is dangerous for our industry, given the rise in consumerism and value placed on 'human' customer service we're experiencing. How can we maintain the pace of start ups?

It all comes down to people and infrastructure

More than half of New Zealand companies surveyed value skills in communication, problem solving and collaboration. At the same time, manufacturing and administrative functions are expected to decrease as a result of automation. Increasingly it is becoming clear that employee make up is hugely important. That's why we recently undertook automation assessments for some of our members who expressed interest in it.

Firm infrastructure also needs attention. If you're a traditional established firm, you need to consider how you can integrate startup mentality – either by building internal capability or working with small startups.

Our Innovation READY program addresses this by introducing lean startup principles to help companies embed a startup innovation culture within their organisations.

Natural disasters don't just happen in nature

Firms are also subject to the natural forces of disruption. That's why we need to be well prepared to embrace future change.

Digitisation can be a net gain for employment provided we start early and invest in the right skill sets.

If traditional firms can get past bureaucracies and regulations to work with small companies or even embed a lean startup mindset, there's always the possibility to move forward. And in doing so, you could become the next big disruption story.

We know that data and digitisation can be a lot to take in. We're here to assist through education, support and facilitation of your journey towards a sustainable future. So why not come in and talk to us about your business challenges. In particular, if you have a product or service you wish to launch and are seeking advice on how best to go about it.

We also recommend you look into our innovation program and how it can help you.

Are you looking for a way to enable your team to be more productive?

Look no further - because we're delivering a day workshop at HERA House 22 November 2018, focused on helping you achieve just that!

Join IMS Project Director Adrian Packer as he provides the practical and coherent tools you need to get your team on track to deliver more.

All through conversation, culture and enhancing their performance.

Secure your spot today - register at:

www.hera.org.nz/event/innovation-ready-set-go-module6

HS+Environment

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Supporting Mental Health Awareness Week: 8 – 14 October, 2018

HERA has made a commitment to make work-life-balance a value that we live by. This means promoting a focus within our team toward total wellbeing and safety.

That's why this month, our Health, Safety & Environment team decided it was important that we support Mental Health Awareness Week (MHAW).

Since 1993, MHAW has been run annually by the Mental Health Foundation. It's endorsed by the World Federation for Mental Health and is marked in over 150 countries at different times of the year. This year's theme in New Zealand is 'Let nature in, strengthen your wellbeing – Mā te taiao, kia whakapakari tōu oranga!'

Nature has been selected as the theme because the simple act of connecting with nature can uplift your wairua/spirit and promote mental health and wellbeing.

For HERA, we took the challenge to remind our members and team how they can grow, support and nurture their wellbeing through nature.

Addressing mental health at work

The Mental Health Foundation of New Zealand is a charity. They work towards creating a society free from discrimination, where all people enjoy positive mental health and wellbeing.

In New Zealand this work is very important – because mental health problems are very common. Nearly half our population will meet the criteria for mental illness diagnosis.

Where, just three years ago it was estimated that 636,000 adults (17%) were diagnosed with a mood disorder and/or anxiety such as depression.

And, that 225,000 of these same adults reported experiencing mental distress in the previous four weeks to this diagnosis.

Our NZ metals industry has a role to play in ensuring we create work environments where employees have mechanisms to speak up. And, a culture where admitting you're mentally unwell is OK to do. We must remove the stigma around talking about how we're feeling to others.

Why? Because it was found through a recent BRANZ study that our NZ construction industry has the highest percentage of suicide for employed men of any industry. A key driver to the high rates – the poor culture.

Described as "macho" and "bullying" and including intolerance of diversity, the culture was seen to significantly contribute to poor mental health of construction industry workers.

For the worksite poor mental health is very dangerous as 'not being present' is seen as a major health and safety risk.

The five ways to wellbeing

We can all take steps to achieve better wellbeing in our everyday life. Regardless of how much or little we may interact with nature.

The Mental Health Foundations gives five core ways to do this:

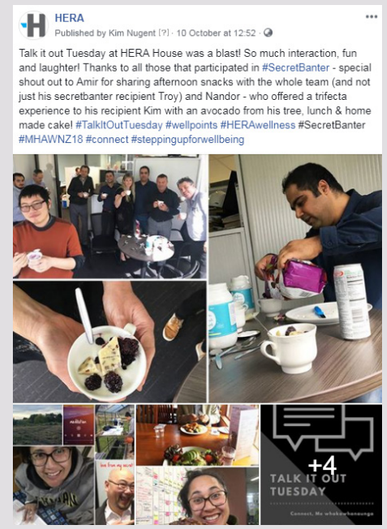
1. **Connect / Whakawhanaungatanga** - You can connect in so many ways. Connect with the people around you, such as your whanau/family, friends, colleagues and neighbours. Connect at home, work, school, or in your local community. Think of these relationships as the cornerstone of your life and invest time in developing them. Building these connections will support and enrich you every day.

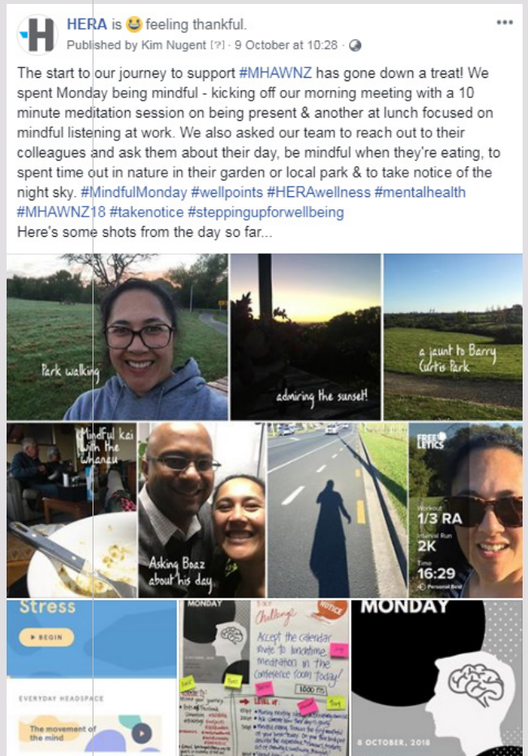
2. **Give / Tukua** - Do something nice for a friend, or a stranger. Thank someone, smile, or volunteer your time by joining a community group. Seeing yourself, and your happiness, linked to the wider community can be incredibly rewarding and creates connection around you. It feels good to give and everybody has something to offer. How will you play your part?

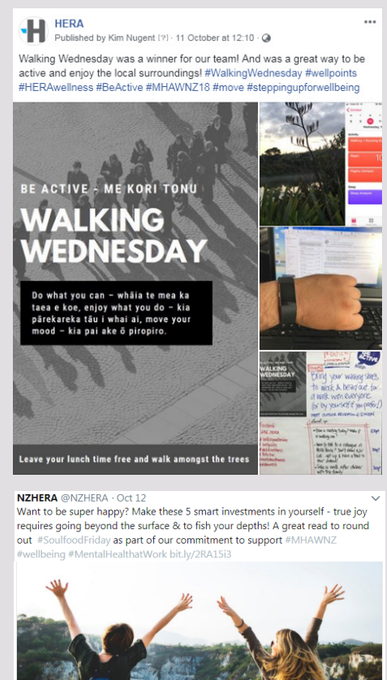
3. **Take notice / Me aro tonu** - Be curious and catch sight of the beautiful, remark on the unusual. Notice the changing seasons. Try savouring the moment, whether you are walking to work, eating lunch or talking to friends. Be aware of the world around you and what you are feeling. Reflecting on your experiences will help you appreciate what matters to you.

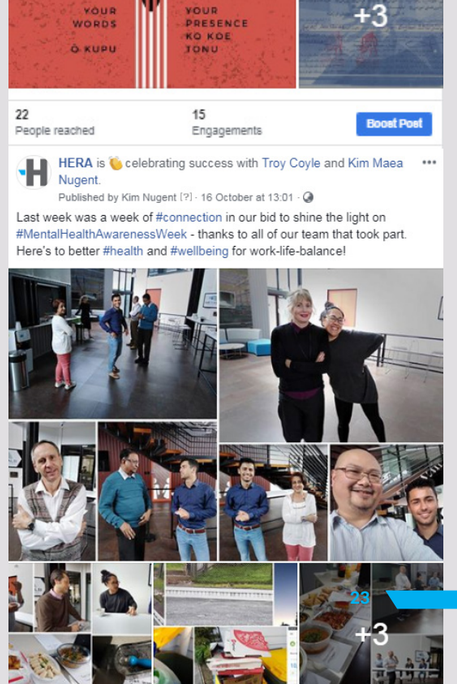
4. **Keep learning / Me ako tonu** - Try something new or rediscover an old interest. Sign up for that course or take on a different responsibility at work. Learn to play an instrument or how to cook your favourite food. Set a challenge you will enjoy achieving. Learning new things will make you more confident as well as being fun. Seek out new experiences and dare yourself.

5. **Be active / Me kori tonu** - Step outside, when was the last time you went for a bike ride, a jog or a walk in the fresh air? You could try playing a game or dancing with young ones. Check out your garden. Pulling some weeds or planting something new can help you work up a sweat. Exercising makes you feel good. Discover a physical activity you enjoy and one that suits your level of mobility and fitness. Do what you can, enjoy what you do, be active and move your mood.









Welcome to our newest members!

Platinum members

- Blake Steel Ltd (Auckland) - Fabricator
- Caliber Design Ltd (Auckland) - Service Provider
- DKJ Welding Services Ltd (Hamilton) - Service Provider
- Ford Steel Engineering Ltd (Auckland) - Service Provider
- Jireh Contracting & Engineering (1998) Ltd (Whanganui) - Fabricator
- Metal Repair Systems Ltd (Auckland) - Service Provider
- MSME Ltd (Auckland) - Fabricator
- Qvalitas Compliance & Consultants Ltd (Tauranga) - Consultant
- Technix Industries Ltd (New Plymouth) - Fabricator

Gold member

- JCD Engineering Ltd

> **Boaz Habib** is with Rosemine Muta.
> 10 October at 12:38
>
> Going walkabout Wednesday as part of mental health awareness week and lo and behold you bump into a friend who is supporting a just cause for the homeless. Good on you Rosemine #mhawnz @NZHERA

NZHERA @NZHERA · Oct 17

Are you doing #NZShakeOut tomorrow 930am? Its a #nationaldrill to remind what earthquake actions to take - #dropcoverhold We're certainly passionate about it as research on #steel performance in #seismic conditions is a key focus for us! #safercommunities

New Zealand ShakeOut 2018 - Taika Waititi
Taika Waititi will be taking part in New Zealand ShakeOut, our national earthquake drill, at 9:30 am, 18 October 2018. Will you?
youtube.com

NZHERA @NZHERA · Oct 18

We think @NZGetThru #NZShakeOut is crucial to keep communities safe in #earthquakes! Everyday our #research is focused on ensuring our #nzfabricated #steel products do just that too. Giving confidence its the safest building choice for NZs #seismic events! bit.ly/heraseismic

HERA
Published by Kim Nugent [?] · 10 October at 13:05 ·

Check out this amazing video submitted by Zahid - of time out in nature with his family as part of #MHAWNZ #stunning #wellpointswinner

#HealthAndSafety

HERA @NZHERA · Oct 1

're continuing our efforts to make sure #healthandsafety is first & foremost fo members. That's why we're sharing this news released by @WorkSafeNZ und #complacency with chemical use. Remember - hazards are everywhere itigate #reduce #eliminate bit.ly/2DHbKET

HERA
innovation in metals

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